

**C. NATHAN JONES, PhD**  
**Assistant Professor of Ecohydrology**  
Department of Biological Sciences, University of Alabama

---

cnjones7@ua.edu • (540)-553-1182 • ecohydrology.ua.edu

**EDUCATION**

- 2015            PhD, *Biological Systems Engineering*, Virginia Tech (Mentor: Durelle Scott)
- 2010            BS, *Biological Engineering (Summa Cum Laude)*, University of Arkansas

**PROFESSIONAL APPOINTMENTS**

- 2019-            Assistant Professor, Department of Biological Sciences, University of Alabama, Tuscaloosa, AL
- 2017-2019      Postdoctoral Fellow, University of Maryland and The National Socio-Environmental Synthesis Center, Annapolis, MD (Mentor: Margaret Palmer)
- 2015-2017      Postdoctoral Researcher, Forest Resources and Environmental Conservation, Virginia Tech, Blacksburg, VA (Mentor: Daniel McLaughlin)
- 2010-2015      Graduate Research and Teaching Assistant, Department of Biological Systems Engineering, Virginia Tech, Blacksburg, VA
- 2009-2010      Natural Resource Specialist, Watershed Conservation Resource Center, Fayetteville, AR  
(9 months)
- 2007-2010      Research Technician, Center for Agricultural and Rural Sustainability, University of Arkansas, Fayetteville, AR (Supervisor: Marty Matlock)

**RESEARCH FOCUS**

Hydrology and water quality; Ecological engineering – stream and wetland restoration; Watershed management; Environmental tracers; Hydrologic modeling; Geospatial analysis

**AWARDS AND HONORS**

Fellowships:

- 2010-2014      Institute of Critical and Applied Technology Doctoral Fellowship, 2010 College of Agriculture and Life Sciences Recipient, Virginia Tech
- 2008-2010      USEPA Greater Research Opportunity Fellowship (Undergraduate)

Awards:

- 2015            PhD Student of the Year, Biological Systems Engineering, Virginia Tech
- 2010            Undergraduate Student of the Year, Biological Engineering, Univ. of Arkansas
- 2010            NSF Graduate Research Fellowship Program, Honorable Mention

## **PUBLICATIONS**

- 2019 Scott DT, Gomez-Velez JD, **Jones CN**, Harvey JW. Floodplain inundation spectrum across the United States. *Nature Communications*. DOI: 10.1038/s41467-019-13184-4
- Smith LL, **Jones CN**, Nelson NG. Featured Collection Introduction: The Emerging Science of Aquatic Systems Connectivity II. *Journal of American Water Resources Association*. DOI: 10.1111/1752-1688.12760
- Jones CN**, Ameli AA, Neff BP, Evenson GR, McLaughlin DL, Golden HE, Lane CR. Modeling connectivity of non-floodplain wetlands: Insights, approaches, and recommendations. *Journal of American Water Resources Association*. DOI: 10.1111/1752-1688.12735.
- Jones CN**, Nelson NG, Smith LL. Featured Collection Introduction: The Emerging Science of Aquatic Systems Connectivity I. *Journal of American Water Resources Association*. DOI: 10.1111/1752-1688.12739
- Schulte ML\*, McLaughlin DL, Wurster FC, Varner MJ, Stewart RD, Aust WM, **Jones CN**, Gile B\*. Short- and long-term hydrologic controls on smoldering fire in wetland soils. *International Journal of Wildland Fire*. DOI: 10.1071/WF18086
- Schulte ML\*, McLaughlin DL, Wurster FC, Balentine K, Varner MJ, Aust WM, Stewart RD, **Jones CN**. Linking ecosystem function and hydrologic regime to inform restoration of a forested peatland. *Journal of Environmental Management*. DOI: 10.1016/j.jenvman.2018.12.042
- 2018 Pieper KJ, Tang M, **Jones CN**, Weiss S, Greene A, Mohsin H\*, Parks J, Edwards MA. Impact of road salt on water quality and corrosion in drinking water from private wells. *Environmental Science and Technology*. DOI: 10.1021/acs.est.8b04709
- Evenson GR, **Jones CN**, McLaughlin DL, Golden HE, Lane CR, Devries B, Alexander LC, McCarty GW, Sharifi A. A watershed-scale model for depression wetland-rich landscapes. *Journal of Hydrology X*. DOI: 10.1016/j.hydroa.2018.10.002  
\*Manuscript invited to be part of inaugural issue of JoH-X after initial review at JoH
- Keys TA, Govenor H, **Jones CN**, Hession WC, Hester ET, Scott DT. Effects of large wood on floodplain connectivity in a headwater Mid-Atlantic stream. *Ecological Engineering*. DOI: 10.1016/j.ecoleng.2018.05.007
- Jones CN**, McLaughlin DL, Henson KA, Kaplan DA. From salamanders to greenhouse gases: Does upland management affect wetland functions? *Frontiers in Ecology and the Environment*. DOI: 10.1002/fee.1744  
\*Manuscript featured on the cover of February 2018 Issue

**Jones CN, Evenson GR, McLaughlin DL, Vanderhoof MK, Lang MW, McCarty GW, Golden HE, Lane CR, Alexander LC.** Estimating restorable wetland water storage at landscape scales. *Hydrological Processes*. DOI: 10.1002/hyp.11405  
\*Manuscript featured as an **HPToday Scientific Briefing**  
\*\*Manuscript designated as **Top 20 downloaded articles in 2018.**

2017 Golden HE, Creed IF, Ali G, Basu NB, Neff BP, Rains MC, Mclaughlin DL, Alexander LC, Ameli AA, Christensen JR, Evenson GR, **Jones CN**, Lane CR, Lang M. Integrating geographically isolated wetlands into land management decisions. *Frontiers in Ecology and the Environment*. DOI: 10.1002/fee.1504

2016 Hester ET, Guth CR, Scott DT, **Jones CN**. Vertical surface water–groundwater exchange processes within a headwater floodplain induced by experimental floods. *Hydrological Processes*. DOI: 10.1002/hyp.10884

Keys TA\*, **Jones CN**, Scott DT, Chuquin D. A cost-effective image processing approach for analyzing the ecohydrology of river corridors. *Limnology and Oceanography: Methods*. DOI: 10.1002/lom3.10095

2015 **Jones CN**, Scott DT, Guth C, Hester ET, Hession WC. Seasonal variation in floodplain biogeochemical processing in a restored headwater stream. *Environmental Science and Technology*. DOI: 10.1021/acs.est.5b02426

2014 **Jones CN**, Scott DT, Edwards BL, Keim RF. Perirheic mixing and biogeochemical processing in flow-through and backwater floodplain wetlands. *Water Resources Research*. DOI: 10.1002/2014WR015647

Scott DT, Keim RF, Edwards BL, **Jones CN**, Kroes DE. Floodplain biogeochemical processing of floodwaters in the Atchafalaya River Basin during the Mississippi River flood of 2011. *Journal of Geophysical Research: Biogeosciences*. DOI: 10.1002/2013JG002477

Manuscripts in Review [Available on request]:

Lee S, McCarty GW, Moglen GE, Lang MW, **Jones CN**, Palmer M, Yeo I, Anderson M, Sadeghi AM, Rabenhorst MC. Seasonal drivers of geographically isolated wetland hydrology in a low-gradient, coastal plain landscape. *Journal of Hydrology*. [Resubmitting with Minor Revisions]

Zimmer M, Kaiser K, Blaszcak J, Zipper S, Hammond J, Fritz K, Costigan K, Hosen J, Godsey S, Allen G, Kampf S, Burrows R, Krabbenhoft C, Dodds W, Hale R, Olden J, Shanafield M, DelVecchia A, Ward A, Mims M, Datry T, Bogan M, Boersma K, Busch M, **Jones CN**, Burgin A, Allen D. Zero or not? Causes and consequences of zero-flow stream gage readings. *WIREs Water*. [Resubmitting with Major Revisions]

## **COMPETITIVE FUNDING**

- Pending (\$26,427) Alabama Water Institute Research Support Request: Tanglewood Biological Station Experimental Catchment Instrumentation. University of Alabama.
- 2019 (\$992,266) NSF Ecosystem Studies. Hydrologic connectivity and water storage as drivers of carbon export and emissions from wetland-dominated catchments. University of Maryland: **CN Jones (PI)**, MA Palmer. Virginia Tech: DL McLaughlin (PI), ER Hotchkiss, DT Scott.
- 2015 (\$150,000) USDA-NIFA Education and Literacy Initiative Postdoctoral Fellowship. Legacy Phosphorus: A study of phosphorus transport along preferential pathways in the saturated subsurface. Z Easton (PI), **CN Jones**, DT Scott, WC Hession. [CNJ Role: Lead conceptual development and grant writing, listed as co-PI due to institutional restrictions. CNJ declined award due to prior acceptance of another postdoctoral position.]
- 2012 (\$5000) Virginia Water Resources Research Center Student Grant. The development of an ecohydraulic model to estimate nitrogen removal in a floodplain. **CN Jones**, DT Scott.
- 2008 (\$2000) University of Arkansas Honors College Research Grant. Modeling watershed scale sediment loading and the effects of best management practices on the West Fork White River. **CN Jones**, S Bajwa.

## **INVITED SEMINARS AND PRESENTATIONS**

- 2019 **Jones CN**. Managing hydrologic connectivity to improve the physical, chemical, and biological functions of aquatic ecosystems. *The Smithsonian Environmental Research Center Seminar*. Edgewater, MD
- 2018 **Jones CN**, Cheng FY, McLaughlin DL, Basu NB, Lang M, Alexander LC. Wetlandscape hydrology: Variation and dominant controls across spatio-temporal scales. *University Council on Water Resources Annual Conference*. Pittsburg, PA
- 2017 **Jones CN**. Simulating hydrology of geographically isolated wetlands. *Molecules to macrosystems: EPA research webinar series on aquatic ecosystem connectivity and function*.
- 2016 **Jones CN**. Solute fate and transport across gradients of hydrologic connectivity. *USDA Agriculture Research Service Seminar*. Fayetteville, AR
- 2012 **Jones CN**, Scott DT. The role of river-floodplain connectivity in nutrient removal. *INTECOL International Wetlands Conference*. Orlando, FL.

## **SELECTED PRESENTATIONS**

- 2019      **Jones CN**, Armstrong A, Hondula KL, Williams M, McLaughlin DL, Lee S, McCarty G, Moglen G, Palmer M. The landscape hydrologic capacitance hypothesis: Exploring hydrogeomorphic and hydroclimatic drivers of wetlandscape hydrology. *American Geophysical Union Fall Meeting*. San Francisco, CA.
- Hondula KL, DeVries B, **Jones CN**, Palmer M. Capturing inundation dynamics of small forested wetlands at high spatial and temporal resolution for improved estimation of methane fluxes. *American Geophysical Union Fall Meeting*. San Francisco, CA.
- Lopez KG, **Jones CN**, Mohsin H, Weiss S, Green A, Edwards M, Peiper K. Establishing a fingerprinting technique to identify road salt contamination in drinking water. *Water Quality Technology Conference*. Dallas, TX.
- Jones CN**, Evenson GR, McLaughlin DM. New geospatial and process-based modeling tools for wetlandscape restoration. *Society of Wetland Science Annual Meeting*. Baltimore, MD.
- 2018      **Jones CN**, Parker JD, Pullen J, Gilmour CC, Jordan T, Heyes A, Palmer M. Seeing the forest for the trees: Using long-term observations from a forest biodiversity experiment to examine the effect of forest restoration and stand diversity on catchment hydrology. *American Geophysical Union Fall Meeting*. Washington DC.
- Jones CN**, Peiper KJ, Mohsim H, Tang M, Weiss S, Parks J, Edwards M. Road salt, lead leaching, and private well systems: A case study from New York State. *University Council on Water Resources Annual Conference*. Pittsburg, PA
- Jones CN**, Palmer MA. Optimizing wetland restoration for both agriculture water use and ecosystem function. *Boundary Spanning: Advances in Socio-environmental Systems Research*. Annapolis, MD
- 2017      **Jones CN**, Cheng FY, McLaughlin DL, Basu NB, Lang M, Alexander LC. Exploring drivers of wetland hydrologic fluxes across parameters and space. *American Geophysical Union Fall Meeting*. Baton Rouge, LA.
- Jones CN**, Ameli A, Neff B, Evenson G, McLaughlin D, and Golden H. Representing wetland connectivity in hydrologic models: Insights from an inter-model comparison. *Connecting the Dots: The Emerging Science of Aquatic System Connectivity (AWRA Specialty Conference)*. Snowbird, UT.
- 2016      **Jones CN**, McLaughlin DL, Chang F, Basu N, Lang M, Alexander L. Variation in wetland connectivity across contrasting landscapes. *American Geophysical Union Fall Meeting*. San Francisco, CA.

**Jones CN.** 2016. Hydrologic connectivity and its effects on downstream hydrology and water quality. *Arkansas Water Resources Center Annual Water Conference*. Fayetteville, AR.

**Jones CN, McLaughlin DL, Lang MW, Alexander LC.** Hydrologic connectivity of depressional wetlands: Modeling across landscapes to elucidate the drivers of surface water and groundwater fluxes. *Society of Wetland Scientists Annual Meeting*. Corpus Christi, TX.

2015 **Jones CN, Scott DT, Gomez-Velez J, Harvey J.** Floodplain connectivity at the continental scale and ecological engineering applications to watershed restoration. *American Ecological Engineering Society Annual Meeting*. Stillwater, OK.

**Jones CN, Scott DT, Hester E, Guth C, Hession WC.** Effect of floodplain reconnection on nutrient flux along a second-order stream. *World Environmental and Water Resources Congress (American Society of Civil Engineers, Environmental and Water Resources Institute)*. Austin, TX.

2014 **Jones CN, Scott DT, Gomez-Velez J, Harvey J.** National assessment of floodplain connectivity. *American Geophysical Union Fall Meeting*. San Francisco, CA.

**Jones CN, Scott DT, Hester E, Guth C, Hession WC.** Floodplain connectivity: a source or sink of nutrients? *EcoStream*. Charlotte, NC.

**Jones CN, Guth C, Scott DT, Hester E, Hession WC.** Stream restoration, floodplain connectivity, and nutrient retention in a 2<sup>nd</sup> order Appalachian stream. *American Ecological Engineering Society Annual Meeting*. Charleston, SC.

**Jones CN, Scott DT, Keim R, Edwards B.** Perirheic mixing and biogeochemical processing within riverine floodplains. *Joint Aquatic Scientist Meeting*. Portland, OR.

2013 **Jones CN, Scott DT, Keim RF, Edwards B.** Dissolved organic matter processing within the Atchafalaya Basin: From river to backwater swamps. *American Geophysical Union Fall Meeting*. San Francisco, CA.

### **SERVICE ACTIVITIES**

2019 Session Co-Chair: Linking social and ecological needs to build floodplain resilience. *American Geophysical Union Fall Meeting*. San Francisco, CA.

2019 Water Quality Technical Committee Member, Hydrology Section, American Geophysical Union

2019 NSF Dry Rivers Research Coordination Network Participant

2019 Fundamentals of Engineering Exam Cut Score Meeting (Environmental Engineering Exam Panel), National Council of Examiners for Engineering and Surveying

- 2018 Guest Associate Editor, Journal of American Water Resources Association, Special issue: *The Emerging Science of Aquatic Systems Connectivity*.
- 2018 Postdoctoral Fellowship Review Panel, The National Socio-Environmental Synthesis Center, Annapolis, MD
- 2018 Fundamentals of Engineering Exam Blueprint Creation Meeting (Environmental Engineering Exam Panel), National Council of Examiners for Engineering and Surveying
- 2017-2018 Water Quality Technical Committee Postdoctoral Member, Hydrology Section, American Geophysical Union
- 2017 Session Co-Chair: Success in integrating models and measurements into management for aquatic connectivity. *Connecting the Dots: The Emerging Science of Aquatic Systems Connectivity (AWRA Specialty Conference)*. Snowbird, UT.
- 2016 Session Co-Chair: Wetland and riparian zone effects on water quality, quantity, and ecology in downstream waters. *American Geophysical Union Fall Meeting*. San Francisco, CA.
- 2016 Wetland connectivity modeling working group member, USGS Powell Center, Fort Collins, CO
- 2015 Joint EPA-USGS Prairie Pothole wetlands workshop participant, Cottonwood Lakes Experimental Station, Jamestown, ND
- 2014-2015 Undergraduate Curriculum Committee Member, Department of Biological Systems Engineering, Virginia Tech
- 2012 Head Graduate Mentor, Dynamics of Water and Societal Systems, NSF Research Experience for Undergraduates, Stream Restoration and Education Laboratory, Virginia Tech
- 2011-2012 President, Graduate Student Association, Department of Biological Systems Engineering, Virginia Tech.
- 2010 Belize Water Resource Development, University of Arkansas and Peacework International, Dangriga, Belize
- 2009 Regional Watershed Planning Internship, Watershed and Aquifer Protection Group, USEPA Region 8 Headquarters, Denver, CO

## **PROFESSIONAL ACTIVITIES**

**Engineering Intern Licensure**, Arkansas (2010)

**Society Membership:** American Ecological Engineering Society, American Geophysical Union, Society of Wetland Scientists

**Journal Reviews [Approximately 2 per semester]:** Freshwater Science, Hydrological Processes, Hydrology and Earth Systems Sciences, Journal of American Water Resources Association, Journal of Geophysical Research-Biogeosciences, Journal of Hydrology, Water Research, Water Resources Research, Wetlands